

Exhibit 1

1 UNITED STATES DISTRICT COURT
2 IN AND FOR THE DISTRICT OF WYOMING

3 CASE NO.: 2:23-CV-00118-NDF
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5 STEPHANIE WADSWORTH, INDIVIDUALLY AND AS PARENT AND
6 LEGAL GUARDIAN OF W.W., K.W., G.W., AND L.W., MINOR
7 CHILDREN, AND MATTHEW WADSWORTH,
8 Plaintiffs
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10 V.
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12 WALMART, INC. AND JETSON ELECTRIC BIKES, LLC,
13 Defendants
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23 DEPONENT: GREGORY E. GORBETT, PH.D.

24 DATE: OCTOBER 24, 2024

25 REPORTER: OLIVIA M. DOSKER

<p style="text-align: right;">Page 10</p> <p>1 correct?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. Do you recall when you were first</p> <p>4 retained as an expert in this case?</p> <p>5 A. Do you mind if I refer to my report?</p> <p>6 Q. Absolutely.</p> <p>7 A. So on April 11, 2024, I was retained for this</p> <p>8 case.</p> <p>9 Q. What were you asked to do in this case?</p> <p>10 A. To conduct an independent analysis of the fire</p> <p>11 that occurred at 1620 Highway 374, Green River, Wyoming.</p> <p>12 Q. Were you given any type of limitations as to</p> <p>13 the particular scope of your analysis?</p> <p>14 A. I mean, primarily I was asked to look at the</p> <p>15 science end of all of, you know, the -- the fire aspect,</p> <p>16 and to help better test hypotheses related to origin and</p> <p>17 the fire development.</p> <p>18 Q. Did you ever go to the scene of the fire?</p> <p>19 A. No.</p> <p>20 Q. Have you ever looked at the actual physical</p> <p>21 evidence involved in the fire?</p> <p>22 A. I have photographs of the fire scene that I</p> <p>23 have reviewed, 3D scan -- the Matterport of the fire</p> <p>24 scene.</p> <p>25 Q. So the scope of your review relating to this</p>	<p style="text-align: right;">Page 12</p> <p>1 relating to origin of a fire, correct?</p> <p>2 A. Well, I'll broaden that because I think the</p> <p>3 actual -- or the actual description in 921 says origin,</p> <p>4 cause, and reasons or causes for injuries and deaths</p> <p>5 related to fires and explosions.</p> <p>6 Q. But fire modeling is not intended to be the</p> <p>7 sole proof of determining origin, correct?</p> <p>8 A. No. It's -- you know, you're -- as a fire</p> <p>9 investigator, you're intended -- or you're supposed to</p> <p>10 be able to describe how the physics of the fire</p> <p>11 developed and spread and affected the structure and</p> <p>12 people. Part of that could be considered modeling.</p> <p>13 Q. And fire modeling allows an investigator to</p> <p>14 eliminate certain hypotheses based upon whatever</p> <p>15 conclusions or results are reached, fair?</p> <p>16 A. That could be a use of the model, yes.</p> <p>17 Q. NFPA 921 does not require fire modeling in</p> <p>18 order to meet the standard for fire investigation and</p> <p>19 analysis, correct?</p> <p>20 A. Again, you don't have to use modeling per se,</p> <p>21 but you do have to have a fundamental understanding of</p> <p>22 physics. And sometimes these are difficult physics that</p> <p>23 are at play, especially like in this scenario where you</p> <p>24 have a lot of variables to account for. So using</p> <p>25 modeling helps you better understand and analyze the</p>
<p style="text-align: right;">Page 11</p> <p>1 fire is photographs, a 3D scan, but you never actually</p> <p>2 saw the physical evidence at the scene, fair?</p> <p>3 A. I did not physically go to the scene. That is</p> <p>4 correct.</p> <p>5 Q. Part of your fire analysis relating to this</p> <p>6 case includes or involves fire modeling, correct?</p> <p>7 A. That is a part of it, yes.</p> <p>8 Q. Can you describe for the jury what fire</p> <p>9 modeling entails?</p> <p>10 A. So fire modeling is the use of both physical</p> <p>11 testing and mathematical analysis of fire phenomena.</p> <p>12 Q. You're familiar, given your background,</p> <p>13 training, and experience, with NFPA 921, correct?</p> <p>14 A. I am familiar with it, yes.</p> <p>15 Q. Does NFPA 921 discuss fire modeling?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. Does NFPA 921 require fire modeling for</p> <p>18 purposes of determining origin of a fire?</p> <p>19 A. No. I mean, in the broad sense of fire</p> <p>20 modeling, there is the component of fire dynamics and</p> <p>21 the analysis of fire dynamics as it relates to origin,</p> <p>22 which is part of what 921 says is to be done for origin</p> <p>23 cause.</p> <p>24 Q. Fire modeling, at least as discussed and</p> <p>25 intended by NFPA 921, is meant to test hypotheses</p>	<p style="text-align: right;">Page 13</p> <p>1 fire dynamics, which is a requirement in 921.</p> <p>2 Q. As part of your involvement in this case you</p> <p>3 were provided various materials including not just</p> <p>4 photographs of evidence, not just the 3D scan, but you</p> <p>5 were also provided deposition transcripts, correct?</p> <p>6 A. Yes.</p> <p>7 Q. And actually on Page 3 of your report, you've</p> <p>8 listed the materials reviewed for purposes of your</p> <p>9 involvement in this case.</p> <p>10 A. Yeah. I think it starts on Page 3 and then</p> <p>11 carries over to Page 4.</p> <p>12 Q. Are there any materials that you reviewed that</p> <p>13 are not listed here?</p> <p>14 A. I don't believe so. I believe that's a -- a</p> <p>15 complete list, at least at the time of the -- I authored</p> <p>16 the report. And I don't believe I've gotten -- I've</p> <p>17 received anything else.</p> <p>18 Q. All right. It looks like you authored this</p> <p>19 report about a month and a half ago, September 9, 2024.</p> <p>20 To your knowledge, sitting here today, is there any</p> <p>21 additional deposition transcripts that you've received</p> <p>22 and either reviewed or not reviewed?</p> <p>23 A. No. I don't believe so.</p> <p>24 Q. Did you review -- the deposition transcripts</p> <p>25 received, was it a paper copy or was it electronic?</p>

<p style="text-align: right;">Page 14</p> <p>1 A. I believe all the -- I know all of the ones 2 that I received were electronic. 3 Q. Did you make any type of notes, highlights, or 4 markups on the electronic copy of those depositions? 5 A. So Derek King's deposition I did highlight. I 6 did not take any separate notes other than the 7 highlights. Mike Schulz's deposition I did take notes 8 and I did highlight. 9 Q. Okay. Those notes were provided to me this 10 morning, a little over a page of notes from Mike 11 Schulz's deposition, correct? 12 A. Yes. And I -- I -- you know, now -- now that 13 I'm looking at my notes, I can't remember if I had his 14 deposition before I wrote my report or that came after. 15 So that might be, you know, a correction to my previous 16 answer. But I do -- I did receive Mike Schulz and Derek 17 King's depositions, and I have reviewed those. 18 Q. Okay. Did you review any -- there's an entry 19 here, it says, "Sweetwater County Sheriff photos, 20 videos, et cetera." 21 Did that include body cam footage? 22 A. Yes. 23 Q. You reviewed all of it? 24 A. For the most part, yes. You know, I -- I did 25 watch it. It's been a while since I've looked at those,</p>	<p style="text-align: right;">Page 16</p> <p>1 Q. Do you remember any of the scope or the 2 content of those discussions? 3 A. I -- you know, I went through his photos. I 4 had a few questions about dimensions. At least the 5 first phone call would've been regarding that. The 6 second one was more about his hypothesis regarding 7 origin. 8 Q. Okay. What did he communicate to you as to 9 his hypothesis regarding origin? 10 A. In essence, that his -- his hypothesis is that 11 a fire started on the exterior and then moved into the 12 structure. 13 Q. Okay. Did you discuss the inspection results 14 with anyone other than Mr. Filas? 15 A. I don't think so. 16 Q. Did you discuss with him the basis of his 17 hypothesis? 18 A. Not in any detail. 19 Q. Other than communicating his hypothesis that 20 the fire started outside and made its way to the 21 interior of the home and questions you had about the 22 photographs, his photographs from the inspection, 23 anything else you recall about that discussion? 24 A. Not really. 25 Q. Do you agree that -- in investigating fires,</p>
<p style="text-align: right;">Page 15</p> <p>1 but yes. 2 Q. Do you know the last time, sitting here today, 3 is -- that you reviewed the body cam footage from the 4 Sweetwater County Sheriff's Office? 5 A. I remember pulling it up during the review of 6 Mike Schulz's deposition because he had some questions 7 related to that. And that would've been the last time I 8 looked at that. 9 Q. You're aware of inspections done at the scene 10 of the fire, correct? 11 A. Yes. 12 Q. You weren't present at any one of the -- those 13 inspections, correct? 14 A. No, I was not. 15 Q. Did you discuss the inspection with any of the 16 attendees other than Mr. LaFlamme? 17 A. Yes. 18 Q. Okay. Who did you discuss those inspections 19 and the results thereof with? 20 A. Joe Filas. 21 Q. When was that discussion? 22 A. Oh, I don't -- I don't remember. I know we 23 had multiple discussions and multiple, like -- probably 24 two different phone calls. But I don't remember the 25 exact dates.</p>	<p style="text-align: right;">Page 17</p> <p>1 that the scientific evidence is always incomplete? 2 MR. LAFLAMME: Object to form. 3 THE WITNESS: Yeah. I don't understand that 4 question. 5 BY MR. AYALA: 6 Q. Well, I'm just -- I'm looking at an article 7 that you published where you stated that "Scientific 8 evidence is always incomplete to some degree, which 9 means there is a measure of uncertainty associated 10 within each analysis." 11 A. It -- it depends on the context of, you know, 12 what I was describing in that publication. 13 Q. You were describing, "The job of a forensic 14 scientist is to provide scientific evidence, notably the 15 analysis of scientific and engineering data, to the 16 justice system in order to reduce uncertainty." 17 So do you agree -- 18 A. Is there a question? Sorry. 19 Q. Yeah. Do you agree that "Scientific evidence 20 is always incomplete to some degree, which means there 21 is a measure of uncertainty associated within each 22 analysis"? 23 A. I think what -- in context of what I was 24 describing in that article is there are some experts 25 that like to testify that they're 100 percent accurate</p>

<p style="text-align: right;">Page 30</p> <p>1 the origin of the fire, fair?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. You don't recall when that was?</p> <p>4 A. No.</p> <p>5 Q. As part of your -- and I received a physical</p> <p>6 drive, if you will, that had your entire file in it.</p> <p>7 Part of that included a fire test, and it was named Fire</p> <p>8 Test Number 2.</p> <p>9 Do you recall seeing that?</p> <p>10 A. Yes.</p> <p>11 Q. Okay.</p> <p>12 A. There should have been a video in there called</p> <p>13 Fire Test Number 2.</p> <p>14 Q. Okay. Was there a Fire Test Number 1 video?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. What was the difference between Fire</p> <p>17 Test Number 1 and Fire Test Number 2?</p> <p>18 A. So we had purchased, you know, similar chairs</p> <p>19 and contents that were reported in the depositions by</p> <p>20 the Wadsworths as what contents were in the smoker shed.</p> <p>21 And we had purchased a -- a wooden chair with a -- you</p> <p>22 know, padding similar to what they had described from a</p> <p>23 peddlers mall, just because that was nearby and</p> <p>24 resembled this furniture that they had testified to. And</p> <p>25 that one was -- had fire-retardant polyurethane foam, so</p>	<p style="text-align: right;">Page 32</p> <p>1 Wadsworth. Through their depositions, they provided</p> <p>2 descriptions of what contents were in there. And so --</p> <p>3 so did the kids. So in reviewing those, the testimony,</p> <p>4 we tried to fill the shed similar to what they reported</p> <p>5 was in the shed.</p> <p>6 Q. Were the contents of the shed important</p> <p>7 variables for your test?</p> <p>8 A. Not really.</p> <p>9 Q. Would the contents and the makeup or materials</p> <p>10 of those contents influence the tests in any fashion?</p> <p>11 A. Not really. Not significantly. We were</p> <p>12 focused on -- you -- the combustibility and how this</p> <p>13 shed burned. So really all we needed to do was get</p> <p>14 something to allow enough heat transfer to ignite the</p> <p>15 shed. And we tried to, as similar as possible, match</p> <p>16 the description that was -- of the contents that were in</p> <p>17 there.</p> <p>18 Q. What is your understanding, if you recall, of</p> <p>19 what actually was inside of the shed on the night of</p> <p>20 incident?</p> <p>21 A. So in reviewing their transcripts, they</p> <p>22 indicate that there's -- there were two chairs, a</p> <p>23 nightstand end table, a heater, a comforter or a quilt.</p> <p>24 And then you know, there were some other miscellaneous</p> <p>25 stuff, but we were focused more on the fuel side of</p>
<p style="text-align: right;">Page 31</p> <p>1 it did not actually transition to flaming.</p> <p>2 Q. Fire Test Number 2 did, correct?</p> <p>3 A. Yes.</p> <p>4 Q. Who was present when you performed the Fire</p> <p>5 Tests Number 1 and Number 2?</p> <p>6 A. So I had an intern this summer, and he was</p> <p>7 present. And William Hicks, a colleague of mine, was</p> <p>8 also present.</p> <p>9 Q. What's the intern's name?</p> <p>10 A. Cody Radzik.</p> <p>11 Q. I saw with these fire tests that there was a</p> <p>12 -- there was at least some assistance -- unless that was</p> <p>13 William Hicks, but there was some assistance there from</p> <p>14 the fire department?</p> <p>15 A. No.</p> <p>16 Q. Okay. Who was the individual who was going</p> <p>17 into the shed for ignition?</p> <p>18 A. Oh, that's a good question. I think that's me</p> <p>19 in turnout gear.</p> <p>20 Q. Okay. All right. Describe how -- describe</p> <p>21 the process of performing the fire test.</p> <p>22 A. So we started with obtaining an exemplar shed,</p> <p>23 the same make and model as that -- that was reported at</p> <p>24 the Wadsworth house on the exterior of the structure. We</p> <p>25 reviewed the transcripts of Stephanie and Matthew</p>	<p style="text-align: right;">Page 33</p> <p>1 things.</p> <p>2 Q. Okay. Do you recall reviewing the materials</p> <p>3 or the material of that blanket or quilt?</p> <p>4 A. I didn't understand your question.</p> <p>5 Q. Let me rephrase it. Do you recall seeing in</p> <p>6 Stephanie -- Stephanie's deposition where she described</p> <p>7 the material of the quilt?</p> <p>8 A. Vaguely. If I remember, she described it as a</p> <p>9 quilt, possibly. If I remember right. Like denim</p> <p>10 material of some sort.</p> <p>11 Q. Did you endeavor to find a denim quilt or</p> <p>12 blanket for the purposes of your fire tests?</p> <p>13 A. So we did look for a similar-described quilt,</p> <p>14 but that was more difficult than you think, to find</p> <p>15 something like that. So we found as close as we could</p> <p>16 and purchased it, you know, locally and added that into</p> <p>17 the -- into the fuel load.</p> <p>18 Q. Okay. But what kind of quilt did you purchase</p> <p>19 and add to the shed?</p> <p>20 A. It was like a comforter-type material,</p> <p>21 essentially with a very similar type denim-esq material</p> <p>22 to as closely resemble what she had described.</p> <p>23 Q. Was it cotton?</p> <p>24 A. No. No. It would have been synthetic.</p> <p>25 Q. Okay. Did you -- as part of your fire tests,</p>

<p style="text-align: right;">Page 34</p> <p>1 did you analyze the effect, if any, or the impact, if 2 any, of the blanket material in contributing to the 3 fire? 4 A. No. There would not have been any significant 5 issue from that. 6 Q. How did you start the fire or ignite it? 7 A. We just used a torch to ignite the chair. 8 Q. Okay. Why did you decide to torch the chair? 9 A. We used a torch as just a flaming ignition 10 source to the chair. It was not our intent of that test 11 to replicate or duplicate the scenario. The intent of 12 this test was to see the ignitability, combustibility, 13 and ultimately the heat release rate of the shed. And 14 what kind of fire would exist from that and what impact 15 that would have on the height of the window in 16 relationship to the smoker shed and -- and, you know, 17 various other things. But it was focused more on, how 18 does the shed burn? So the interior contents, you know, 19 as long as they were similar, it doesn't really add to 20 the -- to what we were looking for or looking to at in 21 this case. 22 Q. And what did you consider for purposes of 23 determining whether the contents were similar? 24 A. We read their testimony and as best -- based 25 on their, you know, generalized descriptions of what</p>	<p style="text-align: right;">Page 36</p> <p>1 Q. Okay. You agree there's no evidence that 2 you've been provided of any cigarette having been 3 improperly discarded? 4 MR. LAFLAMME: Object to form. 5 THE WITNESS: Yeah. That's not my -- I have 6 not reviewed in depth anything related to that. 7 BY MR. AYALA: 8 Q. So when you discussed a smoldering -- a 9 potentially smoldering cigarette, where are you getting 10 that information from? 11 A. We -- it was mentioned in several -- I know at 12 least Stephanie's deposition, as well as described in -- 13 in other file items provided that, you know, Stephanie 14 had been in the smoker shed earlier that morning and had 15 smoked. So that -- that's the reason behind why we 16 added that description of a timeline to a smoldering 17 transition to flaming cigarette. 18 Q. Okay. Did you discuss in your report the 19 possibility of the space heater having caused this fire? 20 A. No. 21 Q. Why not? 22 A. Because basically, that fits within the same 23 timeframe of what a smoldering cigarette would do, so it 24 wouldn't add more time to the timeline associated with 25 the heat release rate curve.</p>
<p style="text-align: right;">Page 35</p> <p>1 were present, we -- we matched as closely as possible. 2 Q. So you were really focused on determining the 3 combustibility of the shed, not necessarily the -- any 4 type of influence that the contents of the shed may 5 cause or affect? 6 A. That -- that's correct. We -- we know from 7 looking at the photos that the contents in the shed 8 completely -- were completely, essentially, consumed. So 9 going off of the testimony description by the only folks 10 that actually had been in the shed, we tried to resemble 11 that as closely as possible. But at the end of the day, 12 we know they were combustible except for the metal 13 chair. So they would just add a little bit to the 14 ultimate heat release rate of this fuel. 15 Q. Did you make any determinations in this case 16 as to the cause? 17 A. No, I did not. That was not my role. 18 Q. You certainly discussed within your report, as 19 part of your hypothesis, the potential cause of this 20 fire, correct? 21 A. I don't believe I did. 22 Q. You discussed a smoldering from a cigarette? 23 A. I -- I do talk about the timeframe related to 24 a smoldering cigarette as it relates to the overall heat 25 release rate curve associated with the smoker shed.</p>	<p style="text-align: right;">Page 37</p> <p>1 Q. Okay. Did you factor in as part of your fire 2 tests of -- the effect and impact of the weather on the 3 heat release rate? 4 A. Yeah. I mean, you always consider the weather 5 as part of, you know, fire aspects. So yes. We 6 considered it. 7 Q. Okay. Did you detail in any of your reports, 8 notes, or materials the effect or impact of the weather 9 on the date of the fire test upon the heat release rate? 10 A. Oh, that -- weather wouldn't have an -- an 11 overall effect on the heat release rate curve. So no. I 12 did not detail that in my report. 13 Q. Did you consider the effect and impact of any 14 of the wind patterns on the flame height? 15 A. Yes. 16 Q. Okay. Did you consider that with regards to 17 the date of incident, the fire on the incident -- the 18 date of incident? 19 A. Yes. 20 Q. Okay. Did you compare the fire test wind 21 patterns to the date of incident? 22 A. Yes. 23 Q. Okay. Did that influence in any way your 24 opinions gathered from the fire test performed? 25 A. Yes.</p>

<p style="text-align: right;">Page 38</p> <p>1 Q. In what way?</p> <p>2 A. We had significant wind the day we did our</p> <p>3 fire test, blowing the wind -- or blowing the flames, as</p> <p>4 you're looking at the shed, to the left, and it was</p> <p>5 still able to reach above the top of the window with</p> <p>6 significant heat and temperatures to create a condition</p> <p>7 that would have failed the window. So regardless of</p> <p>8 what the wind and temperatures and conditions were the</p> <p>9 night of the fire, we had pretty significant weather</p> <p>10 when we did our test that were as adverse to -- to</p> <p>11 simulating the weather that would have been that night,</p> <p>12 and we still had enough energy to create a condition to</p> <p>13 fail the window. So at the end of the day, this fuel is</p> <p>14 more than capable of failing the window.</p> <p>15 Q. Okay. Did temperature factor into your</p> <p>16 analysis as to -- in comparison to the night of incident</p> <p>17 and what effect it would have had on the failure of the</p> <p>18 window?</p> <p>19 A. Of course. It's something we always consider.</p> <p>20 Q. Okay. What was the temperature on the date of</p> <p>21 your fire tests?</p> <p>22 A. I don't remember exactly, but I can -- I can</p> <p>23 look it up for you because that's historical weather.</p> <p>24 You know, we can -- we can always look that up, but the</p> <p>25 -- it's probably on the order of 50, 60 degrees. It was</p>	<p style="text-align: right;">Page 40</p> <p>1 think Mr. Schulz even agreed and gave a temperature in</p> <p>2 his deposition, which is -- fits within the research</p> <p>3 that's available.</p> <p>4 Q. Did you do any type of fire testing to examine</p> <p>5 and analyze a hoverboard being the cause of a fire?</p> <p>6 A. No, I did not.</p> <p>7 Q. Did you do any type of fire testing within a</p> <p>8 similar residence to the Wadsworth residence?</p> <p>9 A. No, I did not. We used modeling instead for</p> <p>10 analyzing that.</p> <p>11 Q. Given the results of the fire test that you</p> <p>12 performed in your analysis, is it possible that the shed</p> <p>13 could have been burning for over 45 minutes?</p> <p>14 A. Flaming combustion of the shed? No. It -- so</p> <p>15 -- okay. Let me -- let me preface that a little bit. We</p> <p>16 extinguished it. When we extinguished it, there was a</p> <p>17 considerable pool fire that was still burning. So this</p> <p>18 plastic melts and pools. And so we did not allow it to</p> <p>19 completely extinguish itself and consume all the fuel.</p> <p>20 So as that as a caveat, you know, we did not let it run</p> <p>21 to 45 minutes.</p> <p>22 Q. When you say "pool fire," can you describe a</p> <p>23 little bit what that means?</p> <p>24 A. So this shed is a -- a plastic material. It,</p> <p>25 when heated, will melt, drip, and pool around the base</p>
<p style="text-align: right;">Page 39</p> <p>1 a relatively pleasant, you know -- temperature-wise,</p> <p>2 versus the night of the fire was -11 degrees. So what</p> <p>3 that tells me is that it is definitely going to fail the</p> <p>4 window from that fuel, because it's more of an issue</p> <p>5 when you have that big of a temperature difference.</p> <p>6 Q. Whether the fire started on the inside of that</p> <p>7 Bedroom number 4 or at the shed outside, given the</p> <p>8 temperature difference from -11 to the inside of the</p> <p>9 home, that window was going to fail in either scenario.</p> <p>10 Do you agree?</p> <p>11 A. I agree that had a fire originated on the</p> <p>12 outside or the inside, the window in that Bedroom number</p> <p>13 4 would have failed eventually. Yes.</p> <p>14 Q. Okay. How long did it take for the shed</p> <p>15 during your fire test to completely burn to the ground?</p> <p>16 A. I can look up -- because we have a -- we have</p> <p>17 a curve. But it's -- I think from ignition to when we</p> <p>18 actually put the fire out would have been on the order</p> <p>19 of 15 minutes.</p> <p>20</p> <p>21</p> <p>22 Q. Okay. Did you do any similar fire tests where</p> <p>23 you tested the window failure?</p> <p>24 A. No. There's adequate research already</p> <p>25 available to help us understand when a window fails. I</p>	<p style="text-align: right;">Page 41</p> <p>1 of where that -- essentially the fuel was. And it's now</p> <p>2 a liquid, so it will essentially spread out as a liquid</p> <p>3 pool, and that's what we extinguished.</p> <p>4 Q. Okay. When the fire is still ignited in this</p> <p>5 pool fire manner in which you just described, how high</p> <p>6 would you anticipate any flames to get?</p> <p>7 A. So when we extinguished it, the -- the flames</p> <p>8 were about, I don't know, four to five feet in height.</p> <p>9 So you know, over time it's going to slowly go down as</p> <p>10 it consumes more and more mass from the fuel.</p> <p>11 Q. Okay. So at -- if that was at 15 minutes</p> <p>12 where it was four to five feet high, what would you</p> <p>13 anticipate, just given your background, training, and</p> <p>14 experience, that the flame height would be at 45</p> <p>15 minutes?</p> <p>16 A. Yeah. I don't know. That -- that's actually</p> <p>17 the whole reason we did the fire test, is because</p> <p>18 nobody's burnt in one of these from all the research</p> <p>19 that I could find. And that was really the purpose of</p> <p>20 that test, is to better understand how this fuel will</p> <p>21 burn. We did not allow it to continue to burn. So</p> <p>22 since there's no research that's also out there, I can't</p> <p>23 -- I'm not going to guess.</p> <p>24 Q. At its height, what was the highest flame</p> <p>25 measured?</p>

<p style="text-align: right;">Page 42</p> <p>1 A. So it was approximately 20 feet in height is 2 what we measured. 3 Q. So within 15 minutes it went from 4 approximately 20 feet to approximately four to five 5 feet? 6 A. That's roughly correct. 7 Q. And you would expect it to continue to 8 diminish in flame height as time goes on? 9 A. Yes. As more and more mass is lost, those -- 10 those flame heights would slowly start to go down. 11 Q. Have you ever done any type of testing, 12 research, or otherwise to determine the rate at which 13 the flame height goes down once it -- once you have a 14 pool fire? 15 A. So I mean, there are fundamental calculations 16 that look at regression rates for liquid pools. And, 17 you know, there is some -- some studies out there that 18 help us understand when -- gasoline, diesel, kerosene, 19 or crude oil and the regression rate associated with 20 those and the flame heights. 21 Q. Have you -- 22 A. Because it's -- it's -- sorry. It's connected 23 to the heat release rate. So those are connected, flame 24 height and heat release rate. 25 Q. Have you looked at any of those materials as</p>	<p style="text-align: right;">Page 44</p> <p>1 Q. Do you have any way of figuring that out? 2 A. We do another test. That would be the only 3 way to do that. 4 Q. Given some of your prior testimony in this 5 case, you will not be offering opinions as to cause, 6 correct? 7 A. No, I -- no, I'm not going to -- I'm not going 8 to opine as to what caused the fire. But I am obviously 9 helping with the analysis and hypothesis testing for 10 origin. And as cause is -- is inherently within the 11 area of origin, that would be the only connection to 12 cause. 13 Q. Okay. And that's -- suffice it to say, other 14 experts certainly have been retained by the defense in 15 this case, and you are deferring to other experts as it 16 specifically relates to the cause of this fire? 17 A. Yes. As to, you know, the definition of what 18 cause means for this, yes. 19 Q. Correct. You are opining as to the origin? 20 A. I'm -- I'm -- I am opining to hypothesis 21 testing related to the physics of the two different 22 origin hypotheses that were put forward. So in a 23 roundabout way, I'm -- I'm discussing the fire 24 development and fire dynamics related to the two origin 25 hypotheses that exist.</p>
<p style="text-align: right;">Page 43</p> <p>1 it relates to this case? 2 A. No. Because, you know, those are -- those are 3 usually studies revolving around diked areas. So you 4 have a set pool and a set depth to that pool. In this 5 case, as it's melting and spreading, you don't have a 6 constant pool size. So mass loss rate of a pool fire is 7 directly related to surface area that can vaporize. 8 So the diked area, you have a constant surface 9 area that's vaporizing and so you can calculate a 10 regression rate. In this case, you have a plastic 11 that's still flowing out as a pool. And so being able 12 to do that wouldn't -- wouldn't be able to be done with 13 -- not -- not with the tests we did. 14 Q. Okay. And although you haven't looked at 15 that, haven't done any type of calculations or 16 otherwise, you would expect that after 40 to 45 minutes 17 that that flame height would have been less than four to 18 five feet? 19 A. Yeah. I mean, eventually, yes. Because 20 you're going to consume the fuel. Eventually the flame 21 heights are going to go down. 22 Q. Did you reach any type of conclusions, or do 23 you have any opinions as to when, without intervention, 24 the flame would have gone out as it relates to the shed? 25 A. No.</p>	<p style="text-align: right;">Page 45</p> <p>1 Q. Okay. Let me see if I can break that down. 2 Are you offering opinions as to consistencies between 3 the results of your fire modeling and the hypothesis 4 that the origin was at the shed? 5 A. You know, that's part of what I'm opining to. 6 Or -- or the analysis that I did includes computer fire 7 modeling as part of the test related to those two origin 8 hypotheses. And you are correct. The interior origin 9 hypothesis does not match the physics or the witness 10 statements. So the only origin hypothesis that -- that 11 fits the physics is the one on the exterior of the 12 house. 13 Q. Okay. So if I can understand your -- the 14 scope of your involvement, your opinions are that, based 15 upon your testing, your modeling, based upon the 16 mathematical analysis, the physics analysis, and your 17 background, training, and experience, it is your opinion 18 that the hypothesis that the fire began at the shed is 19 the most likely point of origin? 20 A. Yes. And you know, not to withstand there's 21 other stuff in the report that helps support that. But 22 yeah, I think you captured most of it. 23 Q. Okay. Are you excluding the possibility that 24 the fire began in Bedroom 4? 25 A. Yes.</p>

<p style="text-align: right;">Page 46</p> <p>1 Q. Okay. So if you're -- and those were the only 2 two hypotheses that you tested, correct? 3 A. Yes. 4 Q. Okay. And so, if you're excluding the 5 possibility of this fire originating in Bedroom 4, then 6 your opinion is that the fire originated, more likely 7 than not, outside? 8 A. From the fire dynamics standpoint, yes. 9 Q. Okay. That's an origin opinion, is it not? 10 A. There's -- there's more to origin than just 11 fire dynamics. So that brings in the witness 12 statements, the arc mapping, the fire patterns. So that 13 -- that I didn't dive into as much as, you know, Joe 14 Filas will. 15 Q. Okay. Well, the witness statements, that -- 16 you took that into consideration, correct? 17 A. I took it into consideration as it related to 18 the physics of this fire and what's physically possible 19 and impossible. So I took it from that standpoint. 20 Q. Okay. What weight did you give to the 21 deposition testimony in your analysis? 22 A. I don't know how to quantify, but obviously, 23 you know, I reviewed the testimony of the -- in the -- 24 in the depositions of the -- of the children and looked 25 at the video that was taken of their interview earlier</p>	<p style="text-align: right;">Page 48</p> <p>1 statements and -- and the deposition transcripts 2 testimony is not considerably dissimilar. So, you know, 3 in essence they're all kind of the same. 4 Q. Let me ask you about the format of your 5 report. Do you have a template from which you work off 6 of for purposes of putting together your report? 7 A. I mean, I wouldn't call it a template. You 8 know, I -- I do have certain things that I include 9 because it is a -- you know, I try to write everything 10 as a Rule 26 report, so that's kind of the general 11 template I try to follow. 12 Q. Okay. Do you refer to or rely on past reports 13 that you've done for certain portions of your report? 14 A. I mean, there's -- there's certain sections in 15 the report that are going to be somewhat similar. I 16 mean, I always use the scientific method. You know, I 17 refer to NFPA 921, those types of things. 18 Q. Okay. By way of example, the qualifications 19 of the expert, is that something you can just pull from 20 a prior report that you've done? 21 A. Yeah. Unless there's, you know, things that 22 have changed or whatever. 23 Q. The Section 2 of your report, fire dynamics, 24 analyst's standard of care policy, does that change from 25 report to report?</p>
<p style="text-align: right;">Page 47</p> <p>1 on, and statements made, you know, to the first 2 responders the night of. So I kind of looked at all of 3 those, but I don't know a, you know, percentage of 4 weight that goes to that. 5 Q. Okay. Well, there was no testimony earlier on 6 seen on video. Those were just statements. You 7 understand that, correct? 8 A. All right. Just -- sorry. They're interviews 9 that were captured on video that I watched. 10 Q. Okay. It -- throughout your report, you 11 reference witness statements. Are you referring to the 12 statements on video or are you referring to the 13 deposition testimony? 14 A. I think I tried to footnote when I'm referring 15 to which throughout the report. 16 Q. Okay. If there are no footnotes associated 17 with a reference to witness statements, are you 18 referring to the video statements or are you referring 19 to the deposition? 20 A. Yeah -- 21 Q. If you know. 22 A. -- I don't know. You'll -- you'll have to 23 ask, you know. If I -- if -- if I didn't footnote 24 something, then you'd have to ask me specifically. But 25 you know, all -- to me, those -- those interview</p>	<p style="text-align: right;">Page 49</p> <p>1 A. Not really. I mean, it -- it might modify a 2 little bit. I'm starting to use Grammarly, and it 3 doesn't like certain phrases I've used for years, so 4 that gets changed. 5 Q. Okay. Section 2.2, applicable codes and 6 standards. Do you pull that from prior reports? 7 A. No, that's going to be specific to the 8 scenario. 9 Q. Okay. Obviously, the data collected, that 10 would be different case to case? 11 A. That's correct. 12 Q. So all of Section 3 is specific to this case, 13 correct? 14 A. Yes. 15 Q. Section 4, data analysis. You talk about 16 computational fluid dynamic simulations. Is that 17 information that you take from other reports? 18 A. I mean, so computational fluid dynamics has 19 been around for a while, so there might be, you know, 20 stuff in here that's similar to other reports. But -- 21 especially when I'm describing what the model is and its 22 intent or purpose. 23 Q. Okay. On page 43, as part of your conclusions 24 in the report, number one is an example where you talk 25 about witness statements without a footnote. Do you</p>

<p style="text-align: right;">Page 58</p> <p>1 Q. Okay. But not in preparation of this -- these 2 opinions?</p> <p>3 A. Not for today, but I read that article. He 4 also, as I mentioned, references it in his Ignition 5 Handbook, and that section I did read to see if that was 6 consistent with this scenario.</p> <p>7 Q. Okay. In the testing that was performed and 8 that is referenced in the article that you cited to, 9 chairs and mattresses were tested. Did you know that?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. Obviously, we're not -- in this case, 12 there was no upholstered chairs or any mattresses within 13 that shed. We could agree on that.</p> <p>14 A. I disagree with that. I believe that's what 15 they testified to.</p> <p>16 Q. That there was a -- the upholstered chair?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. Do you know what --</p> <p>19 A. And similar materials.</p> <p>20 Q. Okay. Do you know what the material of that 21 chair was?</p> <p>22 A. Not exactly, but she does say that it's, you 23 know, an -- an -- essentially, an upholstered covered 24 some kind of foam chair, and that is consistent with the 25 chairs and mattress that the study is referencing.</p>	<p style="text-align: right;">Page 60</p> <p>1 -- and going through it with you, no.</p> <p>2 Q. You mentioned, relating to the smoldering to 3 flame idea, that the times from placement of the 4 cigarette to flaming of 22 minutes to several hours 5 exists.</p> <p>6 That's a -- that's a big variation of time, is 7 it not?</p> <p>8 A. In -- in general, yes.</p> <p>9 Q. Okay. And how do you determine, in this case, 10 whether that was a possibility first, and where along 11 that spectrum of time it would fall?</p> <p>12 A. Well, I think -- I mean, by its nature, the 13 study says it is a possibility. So I think that's 14 answered in the study. As far as specific to this 15 scenario, I didn't do that analysis.</p> <p>16 Q. Okay. How reliable is -- well, strike that.</p> <p>17 The -- do you agree that an item cannot 18 transition to flaming if it's been smoldering long 19 enough to essentially be consumed?</p> <p>20 A. Yeah, that -- it depends.</p> <p>21 Q. I mean, those were his words. You saw that in 22 the article?</p> <p>23 A. I'm sure I did, but it -- it depends, right?</p> <p>24 It's -- it's going to be very scenario-specific, of 25 which I did not analyze that for this case. That's not</p>
<p style="text-align: right;">Page 59</p> <p>1 Q. Okay. Are you familiar with the results of 2 that study performed on the 102 items?</p> <p>3 A. Yeah. Not without pulling the article and 4 looking at it again.</p> <p>5 Q. Okay. You agree that transitioning from 6 smoldering to flaming doesn't occur in all cases?</p> <p>7 A. That is correct.</p> <p>8 Q. Did you -- do you recall the percentage of 9 cases in which transitioning from smoldering to flaming 10 occurs, at least pursuant to the testing and the 11 research done by Babrauskas?</p> <p>12 A. No. But I will tell you, you know, 13 percentages are not -- not the ultimate assessment 14 metric you should be using for that. But no, I don't 15 know that off the top of my head.</p> <p>16 Q. Okay. Did you know that as part of the 17 testing performed by Babrauskas that you cited to, and 18 at least partially relied on in your report, that there 19 was an electric ignition source for many of the items?</p> <p>20 A. That's probably -- that's a standard way of 21 testing these items. That does not shock me.</p> <p>22 Q. Are you familiar with any of the variables or 23 differing factors that were used in the testing relied 24 upon by Babrauskas?</p> <p>25 A. I -- without pulling the article right now and</p>	<p style="text-align: right;">Page 61</p> <p>1 what I was asked to do.</p> <p>2 Q. Okay. Did you analyze at all the location of 3 the ashtrays within that shed?</p> <p>4 A. No. That was not part of my analysis.</p> <p>5 Q. Did you analyze the material or the makeup of 6 those ashtrays at all?</p> <p>7 A. No, it was not part of my analysis.</p> <p>8 Q. From all of the evidence and materials that 9 you received, and you reviewed, was there any evidence 10 that establishes a cigarette was the cause of this fire?</p> <p>11 A. Other than --</p> <p>12 MR. LAFLAMME: Object to form.</p> <p>13 THE WITNESS: I was going to say, other than 14 she smoked out there and she -- she testified that 15 she smoked out there, that is the only information 16 that I have, because I did not dig into that side of 17 the analysis.</p> <p>18 BY MR. AYALA:</p> <p>19 Q. Okay. But you would agree, based on what 20 you've reviewed, that there was no testimony from 21 Stephanie or any other member of the Wadsworth family 22 that there was a cigarette that was wrongly or 23 wrongfully discarded within that shed on the night of 24 incident?</p> <p>25 A. Yeah, that -- that I didn't look into. That</p>

<p style="text-align: right;">Page 70</p> <p>1 Do you have any reason to believe that on the</p> <p>2 morning of incident that the burn rate of that shed</p> <p>3 would have varied in any way?</p> <p>4 A. I don't believe so. I think that's -- that's</p> <p>5 pretty much exactly how the shed would've burned.</p> <p>6 Q. Regardless of materials or contents within</p> <p>7 that shed?</p> <p>8 A. That's correct, because it's -- it's the shed</p> <p>9 that's driving that fire at that point.</p> <p>10 Q. Would the contents have influenced though the</p> <p>11 -- under this hypothesis, would it have influenced the</p> <p>12 timing of going from smoldering to flame?</p> <p>13 A. Potentially, yes.</p> <p>14 Q. Depending on if the theory or hypothesis is a</p> <p>15 smoldering cigarette, depending on the proximity of that</p> <p>16 material or those contents to the smoldering cigarette?</p> <p>17 A. Sure. There -- I mean, there are a lot of</p> <p>18 variables to smoldering transition to -- to flaming.</p> <p>19 Q. But that's not your part of the analysis as to</p> <p>20 the cause as to the existence of a smoldering cigarette</p> <p>21 or otherwise?</p> <p>22 A. That's correct. I didn't do that analysis.</p> <p>23 Q. On page 11 at the top, you talk about G.'s</p> <p>24 statements of a fire behind him, melted through the</p> <p>25 window, and moved up the wall. He remembers -- first</p>	<p style="text-align: right;">Page 72</p> <p>1 to look back at his -- my notes.</p> <p>2 Q. Okay. Is there a reason why you didn't</p> <p>3 reference any of his testimony regarding fire inside of</p> <p>4 the bedroom near the hoverboard?</p> <p>5 A. Yes, for a few reasons. I -- I did see -- you</p> <p>6 know, they mentioned I think during the video interview</p> <p>7 that there was ash possibly by the hoverboard. And when</p> <p>8 hoverboards do, you know, transition to flaming, they</p> <p>9 are not going to be the appearance of ash, it's going to</p> <p>10 be a significant fire from that. So I -- I would've</p> <p>11 expected if that was the case, if the hoverboard was on</p> <p>12 fire, he -- he would've been a lot more clear that the</p> <p>13 fire was at -- at the hoverboard and it would've been a</p> <p>14 significant fire at the hoverboard. So it doesn't fit</p> <p>15 his earlier interview. I did -- I did read that, but it</p> <p>16 doesn't fit physically with his interview earlier or the</p> <p>17 physics of him surviving this fire.</p> <p>18 Q. Okay. But you mentioned ash that he said in</p> <p>19 his interview, but I was talking about the deposition.</p> <p>20 Do you recall his reference in the deposition to fire</p> <p>21 inside of his bedroom when he woke up and specifically</p> <p>22 in the area of the hoverboard and making its way as he</p> <p>23 saw it towards the window?</p> <p>24 A. Yeah, he did say that flames were shooting up</p> <p>25 and under the door from the -- where he thought the</p>
<p style="text-align: right;">Page 71</p> <p>1 thing he remembers is "the fire behind my back, the fire</p> <p>2 by the window."</p> <p>3 You took this, at least according to your</p> <p>4 footnote there, from the interview with the sheriff's</p> <p>5 department, correct?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. Did you correlate those statements with</p> <p>8 his deposition testimony?</p> <p>9 A. I remember reading his deposition and, you</p> <p>10 know, it followed along closely to what he -- he</p> <p>11 mentioned in this interview.</p> <p>12 Q. Okay. Do you recall reading in G.'s</p> <p>13 deposition testimony, his recollection of fire inside</p> <p>14 the room?</p> <p>15 A. Vaguely, sitting here now, I -- I do remember</p> <p>16 him consistently saying the fire was -- you know, that</p> <p>17 heat was behind him and the window had failed and was</p> <p>18 open. And then he -- I think he also references the</p> <p>19 wall. So I -- I think that was pretty consistent with</p> <p>20 his early on statements in his -- in the video interview</p> <p>21 as well.</p> <p>22 Q. He also mentions the bed being on fire. Do</p> <p>23 you recall that?</p> <p>24 A. No, I -- I don't -- I'm not sure. That's</p> <p>25 exactly what he said. I'll have to look -- I would have</p>	<p style="text-align: right;">Page 73</p> <p>1 hoverboard was. But again, if you -- you look at where</p> <p>2 the location of the hoverboard, it wasn't behind the</p> <p>3 door, so I don't understand -- I guess I didn't</p> <p>4 understand how that connected, but I -- I do remember</p> <p>5 reading something about that, yes.</p> <p>6 Q. Okay. So would it be fair to say that, at</p> <p>7 least as it relates to those portions of G.'s testimony,</p> <p>8 that was not accepted by you as part of your analysis as</p> <p>9 possible?</p> <p>10 A. So I -- I accepted that that's how he</p> <p>11 testified, right. I did definitely read that. Whether</p> <p>12 or not it's physically possible and him to survive, I</p> <p>13 disagree with that.</p> <p>14 Q. Okay. Are there other portions of G.'s</p> <p>15 testimony that you did not rely upon as part of your</p> <p>16 conclusions --</p> <p>17 MR. LAFLAMME: Object to form.</p> <p>18 BY MR. AYALA:</p> <p>19 Q. -- or that you discarded as not possible?</p> <p>20 A. I don't think his. I -- I think everything</p> <p>21 else he testified, you know, in the -- in the -- in his</p> <p>22 earlier interview and then the testimony matches, you</p> <p>23 know, corroborates with the physical evidence and -- and</p> <p>24 the physics. I don't think there's anything else that</p> <p>25 he mentioned in his testimony months later in his</p>

<p style="text-align: right;">Page 90</p> <p>1 standpoint, it goes from a -- a fire in the room to a 2 room on fire. And from a physics standpoint, how that 3 happens is you have upper gas that starts to descend 4 that's high enough temperature, that radiates enough 5 energy to lower contents and fuels within the room, and 6 all of those contents and items within the room more or 7 less reach their ignition temperature around the same 8 time. So you go from one thing burning to almost 9 everything in the room burning. 10 Q. Does the timing differ for their ability to 11 escape safely prior to the room flashing over? 12 A. Their ability to escape through that doorway 13 is -- is going to be greatly influenced if the fire is 14 in their path, right? So the hoverboard is generally in 15 the path of their egress. So that would have created 16 conditions, high enough temperature, that had these boys 17 breathed in that level or that high of temperature 18 gases, they would have become incapacitated relatively 19 quickly. So it -- some of the calculations show that 20 that could have happened earlier than the actual fully 21 involved room issue we just talked about. 22 Q. And again, you're -- you keep talking about 23 calculations. What you're referring to is -- are 24 calculations that are performed by the fire modeling 25 software?</p>	<p style="text-align: right;">Page 92</p> <p>1 to make sure that we're checking the physics and not 2 just relying upon, you know, years of experience. So 3 that's -- it is kind of a combination. 4 Q. The fire modeling software that you used, 5 what's the name of it? 6 A. So I used empirical correlations, which are 7 just basic hand calculations that come from experimental 8 data, as well as the computational fluid dynamics model. 9 That's the one that I used, was Fire Dynamics Simulator, 10 or otherwise known as FDS. And that was produced by 11 NIST, the National Institute of Standards and 12 Technology. 13 Q. Okay. Are there certain assumptions or 14 defaults that are set forth in the software that you 15 use? 16 A. There aren't any defaults. You -- you have to 17 input all of the data. There are values from material 18 databases that we use to assign to specific known 19 materials. So those are -- those are added, yes. 20 Q. And the material databases that certain 21 information is pulled from, is that within the software, 22 meaning the software already has that built in, and you 23 just have to apply it? 24 A. No. 25 Q. Okay.</p>
<p style="text-align: right;">Page 91</p> <p>1 A. Partly, yes. 2 Q. Okay. 3 A. But we also have the empirical correlations 4 that I -- I used in the -- in my report, as well as, you 5 know, generally, just fire protection safety from our 6 years of experience in -- and education. 7 Q. The conclusions that you reached in your 8 report are based upon mathematical equations? 9 A. No. That's -- that's incorrect. It's -- it's 10 partly how my opinions are reached, but not by itself. 11 Q. Okay. The opinions that -- and conclusions 12 that you've reached as to the origin being the shed is 13 heavily influenced by mathematical equations through the 14 fire modeling and the empirical correlations that you've 15 discussed? 16 A. No. I was -- I wouldn't say heavily 17 influenced. Obviously, those are tests of the 18 hypothesis. You know, just my 20-something years of -- 19 of doing this and understanding fire dynamics, and a 20 Ph.D. in this, allows me to -- to draw certain 21 conclusions. But the -- the computer modeling and 22 empirical correlations assist in testing those thoughts, 23 and how physics would've developed in this space. 24 Because, you know, regardless of your years of 25 experience, fire is a difficult phenomenon that we need</p>	<p style="text-align: right;">Page 93</p> <p>1 A. No. You -- you actually have to include or 2 input that data from known research of material 3 properties. 4 Q. Okay. So would it be fair to say that the 5 results of your fire modeling through the software that 6 you've described is based upon information that you put 7 in? 8 A. No. I -- well, I was the user who input it, 9 yes. But this -- these are thousands of research 10 studies that are available, where we -- we get those 11 data. So that data comes from tests that have been 12 done. And that's where we get the material properties. 13 But yes, I -- I was the -- the person who had to input 14 it into the modeling. 15 Q. Okay. You put in the information, you choose 16 the studies and the research that renders the 17 information that you put into the software, correct? 18 A. No. It's not like I pick and choose a study. 19 It -- it is usually a range from all the studies. So 20 it'll be, like -- five to ten is what this research 21 shows for this material property. And we have to apply 22 that range and see what ultimate -- in -- what ultimate 23 effect it has on our output or conclusions. 24 Q. Okay. But you're choosing that range, 25 correct?</p>

<p style="text-align: right;">Page 94</p> <p>1 A. No. Those are -- those are standard ranges 2 that I pull from the research that's available. So it's 3 not like I just pick one thing and it's -- and it's 5, 4 and I only use 5. It's going to be a whole bunch of 5 studies that are summarized, and it says a range. So as 6 an example, just five to ten, so we would put both -- 7 you know, that range in and bound the -- the question 8 and bound the answers from that.</p> <p>9 Q. How do you choose the studies that you rely 10 on?</p> <p>11 A. Go to the most recent summary of all those 12 studies. So the Society of Fire Protection Engineers 13 has a handbook that they -- they publish every so often. 14 It's not -- it's not a cycle, but it's, you know, three 15 to five years or so. And that has all of the old and 16 newer studies in there. And that's where we get the 17 ranges from.</p> <p>18 Q. Okay. Any other source, or is that the main 19 source?</p> <p>20 A. That -- that's a big source, but, you know, 21 obviously NFPA 921 has data that we can use as well. 22 There's journal articles. So if there's something 23 specific that has not yet made it into any of those 24 summarized resources, we also, you know, pull journal 25 articles as well, all of which would be cited here in</p>	<p style="text-align: right;">Page 96</p> <p>1 A. No. What they're summarizing is other 2 research that has been done on this specific material, 3 and they're providing the range based on, you know, 4 previous research studies that have been done, as well 5 as theirs.</p> <p>6 Q. Do you know whether there was other research 7 available outside of these two articles and any 8 information within those articles?</p> <p>9 A. Not off the top of my head, without digging 10 into those articles. But, you know, these are -- I like 11 to cite to the summary articles, because they provide, 12 kind of, that bigger range of all the test data that's 13 available.</p> <p>14 Q. Are they authoritative?</p> <p>15 A. Yes. On this issue, as far as what material 16 properties I was using specific to this model.</p> <p>17 Q. Okay. Page 13, you go on to cite two more 18 references, correct?</p> <p>19 A. Yes.</p> <p>20 Q. Okay. That's 18 and 19. With regards to 18, 21 that relates to a bunk bed?</p> <p>22 A. So yes. This study did heat release rates of 23 modern residential furniture -- or furnishings. They -- 24 again, they summarized what available tests were -- had 25 been done, and then they did their own tests, and they</p>
<p style="text-align: right;">Page 95</p> <p>1 the report.</p> <p>2 Q. Okay. Aside from the discussion of the 3 smoldering cigarette and the times relating to that, 4 what other journal articles did you rely upon for 5 purposes of inputting the information into the software?</p> <p>6 A. So do you want me to go one by one, but there 7 -- there's a bunch, they're all listed as --</p> <p>8 Q. Yeah. Give me the pages they're on.</p> <p>9 A. -- in endnotes or footnotes, I guess. So 10 like, page 12, there's two listed on the bottom of page 11 12.</p> <p>12 Q. That's footnotes 16 and 17?</p> <p>13 A. Yes.</p> <p>14 Q. With regards to wood paneling burns?</p> <p>15 A. Yes.</p> <p>16 Q. Okay.</p> <p>17 A. And --</p> <p>18 Q. Were there other articles available discussing 19 wood paneling burns and their rate?</p> <p>20 A. So this would've been a summary of those. So 21 there are other articles in this article that they're 22 summarizing the range of data.</p> <p>23 Q. Okay. And so, the summary within those 24 articles of data, again, that's the authors summarizing 25 whatever they select, correct?</p>	<p style="text-align: right;">Page 97</p> <p>1 provided that here. I was using it, specific to this 2 citation, for the bunk bed.</p> <p>3 Q. Did that specifically -- did that article 4 specifically discuss bunk beds?</p> <p>5 A. Yes.</p> <p>6 Q. Did it specifically discuss the same material 7 of bunk bed?</p> <p>8 A. Yes.</p> <p>9 Q. Okay. Were there other studies or literature 10 available aside from that reference, footnote number 18, 11 on this topic?</p> <p>12 A. Not -- not that I know off the top of my head. 13 Again, this would be a summary of test data, test -- 14 testing that's been done in the past and their tests. So 15 it kind of gives us a -- a decent range.</p> <p>16 Q. Okay. Do you find that article to be 17 authoritative on this issue?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. Reference 19, you relied on that for 20 the same topic, the bunk beds?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. Also authoritative on the issue?</p> <p>23 A. Yes.</p> <p>24 Q. Did it discuss and cover the same studies and 25 research performed, or different?</p>

<p style="text-align: right;">Page 102</p> <p>1 THE WITNESS: Well, again, I -- I don't know if</p> <p>2 they would've been able to see that perspective.</p> <p>3 BY MR. AYALA:</p> <p>4 Q. Okay. Doesn't it defy physics, sir, when you</p> <p>5 talk about relying on testimony that the window was</p> <p>6 breached, and within seconds the bedding is on fire, and</p> <p>7 within seconds the smoke alarms are going off.</p> <p>8 Doesn't it defy physics, it -- that at least</p> <p>9 one of the boys is still in bed after the breach, more</p> <p>10 than seconds after the breach, and somehow can't recall</p> <p>11 his bedsheets even being on fire?</p> <p>12 A. Again, I -- I think the issue is perspective.</p> <p>13 You know, where are they at? Where can they see where</p> <p>14 it ignited?</p> <p>15 Q. You would expect those bed sheets to be</p> <p>16 consumed in flame, wouldn't you?</p> <p>17 A. No. It -- it takes a while to -- to burn all</p> <p>18 of that.</p> <p>19 Q. How long?</p> <p>20 A. I don't know off the top of my head, but there</p> <p>21 are -- there is a lot of bedding material heat release</p> <p>22 rate studies. So we can -- we can look at that.</p> <p>23 Q. You didn't do that calculation?</p> <p>24 A. No.</p> <p>25 Q. Okay. Did you do the calculation relating to</p>	<p style="text-align: right;">Page 104</p> <p>1 question today.</p> <p>2 Q. Okay. Well, do you have those with you?</p> <p>3 Because I know you have your computer with you. Do you</p> <p>4 have everything that you've prepared in this case?</p> <p>5 A. Yes.</p> <p>6 Q. Why don't you go ahead and get that out.</p> <p>7 Because I want to make sure that if there's stuff that</p> <p>8 you've included in your analysis, that you have access</p> <p>9 to that readily.</p> <p>10 A. Okay.</p> <p>11 MR. AYALA: So why don't we take a couple</p> <p>12 minutes and set up whatever you need to set up.</p> <p>13 THE VIDEOGRAPHER: Do you want to go off the</p> <p>14 record?</p> <p>15 MR. AYALA: Yep.</p> <p>16 THE VIDEOGRAPHER: Okay. We're off the record.</p> <p>17 The time is 12:34 p.m.</p> <p>18 (OFF THE RECORD)</p> <p>19 THE VIDEOGRAPHER: We are back on the record</p> <p>20 for the deposition of Dr. Gorbett. My name is</p> <p>21 Madison Haven. Today is October 24, 2024. The time</p> <p>22 is 12:43 p.m.</p> <p>23 BY MR. AYALA:</p> <p>24 Q. Think before we took a break, we were</p> <p>25 discussing to what extent your analysis took into</p>
<p style="text-align: right;">Page 103</p> <p>1 the quilt in the shed that you used?</p> <p>2 A. I -- I don't understand your question.</p> <p>3 Q. Sure. There was a quilt that you placed into</p> <p>4 the fire test shed, correct?</p> <p>5 A. Yes. I put -- I put a material in there</p> <p>6 similar to what she had mentioned.</p> <p>7 Q. Did you test at all the amount of time it took</p> <p>8 for that sheet, that quilt, to be consumed in flame?</p> <p>9 A. No.</p> <p>10 Q. The fire alarms, under this theory of the fire</p> <p>11 originating outside, the smoke alarms would have been</p> <p>12 going off within seconds of that window breach, correct?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. How long? Do you know?</p> <p>15 A. No. But it -- it -- it's -- you know, it's</p> <p>16 seconds. I know that.</p> <p>17 Q. Did you do any measurements or analysis as to</p> <p>18 the amount of smoke that would have entered the home</p> <p>19 once that window breached?</p> <p>20 A. I didn't do an independent analysis, but it</p> <p>21 could be done from, you know, the 50 simulations that I</p> <p>22 did.</p> <p>23 Q. Okay. But that hasn't been done to date?</p> <p>24 A. It's in -- it's there. I just haven't --</p> <p>25 don't have it pulled out and -- and ready to answer your</p>	<p style="text-align: right;">Page 105</p> <p>1 account the timing for smoke to have entered the room</p> <p>2 from the outside shed area and caused the smoke alarms</p> <p>3 to go off. And you wanted to look at some of the</p> <p>4 studies that you performed. And if you can just kind of</p> <p>5 walk me through what you're looking at and what's</p> <p>6 reflected.</p> <p>7 A. So we can go into, you know, individual</p> <p>8 simulations if you'd like, but I -- what I try to do is</p> <p>9 provide you a computer fire modeling notes into an Excel</p> <p>10 spreadsheet.</p> <p>11 Q. Yep.</p> <p>12 A. That kind of summarizes a lot of that, so</p> <p>13 that's what I'm looking at currently.</p> <p>14 Q. Okay. And so based upon that spreadsheet and</p> <p>15 those -- the modeling results, how much time -- under</p> <p>16 this hypothesis and theory of the fire originating</p> <p>17 outside, how much time after the window failure would it</p> <p>18 have taken for the smoke alarms to go off?</p> <p>19 A. It would've been less than ten seconds.</p> <p>20 Q. Okay. And how much smoke would have entered</p> <p>21 within those ten seconds?</p> <p>22 A. Yeah. Without -- I can get that answer for</p> <p>23 you. I don't have that in the summary notes. So that</p> <p>24 would have required to go in the individual simulations.</p> <p>25 And there's a couple different ways to do that. You can</p>

<p style="text-align: right;">Page 106</p> <p>1 visualize it by, you know, looking at the -- the actual 2 animation, or you can pull the actual data from the 3 spreadsheet and do that. But I -- I don't have that 4 readily available. That's not something I looked at. 5 Q. Okay. Well, what work is it going to take you 6 to look at, spreadsheet or anything else, to determine 7 the amount of smoke that would have been in the room at 8 the time the fire alarms go off? 9 A. So I can -- I mean, I can pull up a couple of 10 simulations, and we can look at it from a visual 11 standpoint. But to sit down and actually pull the data, 12 tell you the specific amount, that -- that takes a 13 little bit of time. Not something I could do sitting 14 here right now. 15 Q. Okay. 16 A. It's -- it's here. It's just you have to pull 17 all the data out. 18 Q. And again, is that -- to make that 19 determination of the amount of smoke that would have 20 filled that bedroom within any amount of time, whether 21 it's five seconds, ten seconds, or beyond that, that's a 22 computation that's performed by the software based upon 23 some of the research numbers and figures that you've 24 outlined in your report? 25 A. Yes.</p>	<p style="text-align: right;">Page 108</p> <p>1 you know, generally, a fire originating in the room will 2 do this. Generally, a fire on the exterior will do 3 this. So kind of the governing equations or governing 4 physics from those. 5 Q. And because you used the term "generally," 6 obviously that infers that there are exceptions to the 7 generalities, fair? 8 A. I mean, in this scenario, not really. The -- 9 the interior does the same thing regardless if I change 10 the heat release rate by 20 percent plus or minus, 11 regardless if I change the opening of the window or the 12 failure of the window from 250 degrees to 300 to 350 13 degrees. That doesn't change. Same thing with the 14 exterior fires. The governing physics there are -- are 15 essentially going to show the exact same thing. 16 Q. What's the margin of error in use of the 17 modeling -- computer modeling? 18 A. So you got to get into, like, specifics on the 19 margin of error for something like that. Like what 20 specific variable are you questioning the rate of -- or 21 the -- the error is. So it's -- it's a deeper question 22 than -- you -- you can't just characterize the model has 23 a, you know, plus or minus five percent error. It -- 24 it's not -- it doesn't work that way. You have to look 25 at the very specific physics.</p>
<p style="text-align: right;">Page 107</p> <p>1 Q. Obviously, there's variations in the results, 2 correct? 3 A. Yes. So I always try to provide -- since it's 4 a range of input variables, you have to also put a range 5 of what the -- the answers or the conclusions can be. So 6 you'll see everything will have, like, a minimum and a 7 maximum timing, at least what I summarized in the 8 spreadsheet. But that's why I do 50 simulations is, you 9 know, we're accounting for those differences in the 10 variables and then ultimately the differences in the 11 output. 12 Q. Okay. And is it your testimony that the 13 results of all of those simulations, wherever they might 14 fall, but the results of the totality of those 15 simulations are the conclusion of what occurred with 16 certainty? 17 A. So I'll -- I'll phrase it the way that makes 18 most sense to me and I think it's answering your 19 question. But the purpose of the simulations are to 20 test the hypotheses, in this case of origin, as it 21 relates to what we know about the fuels there. And what 22 that tells us from these simulations in this scenario is 23 I can tell you the governing physics that apply to both 24 of those hypotheses. And so that's kind of what the 25 totality of all of this will do. It will show us like,</p>	<p style="text-align: right;">Page 109</p> <p>1 Q. Okay. Well, there -- there's been articles 2 out there that talk about the margin of error with fire 3 modeling softwares, and it describes it as anywhere from 4 15 to 20 percent. Have you seen that? 5 A. It depends on what they're talking about. I 6 don't know what article you're -- you're describing, but 7 a 15 to 20 percent error for modeling is not unheard of. 8 Q. Okay. 9 A. That's why we do the range, to account for 10 that potential error. 11 Q. There was actually a case out of New York that 12 discussed fire modeling. And, in fact, it was a case in 13 which an expert's fire modeling analysis was excluded at 14 the time of trial. And in it, they noted that fire 15 modeling carries with it a 15 to 20 percent margin of 16 error assuming all conditions are correct but could be 17 as high as 80 percent depending upon the real 18 conditions. Have you ever heard of that? 19 A. I'm somewhat familiar with that case. 20 Q. Okay. Dr. Urbas was -- it was his testimony. 21 He was the expert. And Dr. Urbas acknowledged that 22 there'd be -- there could be a difference between the 23 material represented in a table and the actual material 24 at the fire scene. Do you agree with that? 25 MR. LAFLAMME: Object to form.</p>

<p style="text-align: right;">Page 122</p> <p>1 approximately 400 to 450 seconds, assuming a flaming 2 ignition of the comforter." 3 Have I read that correctly? 4 A. Yes. 5 Q. Okay. So that's at least one assumption that 6 you have to make for purposes of these ranges to be 7 accurate? 8 A. To some extent, yes. You know, if -- if you 9 ignited, flaming, anything that was able to produce 10 enough heat to ignite the -- the shed, it's going to 11 behave very similarly. That -- that is throughout the 12 research on heat release rates and how fuels burn. So 13 regardless if it's a comforter or the chair or the end 14 table or however it, you know, originates, as long as 15 you get flaming combustion, that's enough to ignite this 16 shed. This is generally how that shed is going to burn. 17 Q. You go on to say, "The fire could've smoldered 18 before transitioning into flaming combustion, due to the 19 type of fuels and potential ignition sources. Research 20 has been conducted on the length of time it takes for a 21 cigarette to transition from smoldering to flaming 22 combustion, which states the transition from smoldering 23 to flaming does not occur in all cases. When it does, 24 times from placement of the cigarette to flaming of 22 25 minutes to several hours have been reported."</p>	<p style="text-align: right;">Page 124</p> <p>1 -- they phrase it, and we know she had been in there 2 smoking. So I thought it was a reasonable research to 3 describe that this could be a smoldering fire that later 4 transitions into this type of curve that we produced in 5 our fire test. 6 Q. Okay. And again, we keep using the term could 7 be. 8 You don't have any evidence to show that 9 that's actually what happened? 10 MR. LAFLAMME: Object to form. 11 THE WITNESS: On the smoldering cigarette, no. 12 I -- I didn't do that analysis. 13 BY MR. AYALA: 14 Q. Okay. And even without doing a full analysis 15 of that, you've reviewed deposition testimony, you've 16 reviewed reports from investigative officials. From 17 everything that you've reviewed -- you've reviewed 18 pictures. 19 From everything you've reviewed, you've not 20 seen any physical evidence that establishes that there 21 was a smoldering fire that turned to flaming as a result 22 of a cigarette? 23 MR. LAFLAMME: Object to form. 24 THE WITNESS: So you know, go back to my 25 previous answer if I don't capture it here, but</p>
<p style="text-align: right;">Page 123</p> <p>1 Did I read that correctly? 2 A. Yes. 3 Q. Okay. Again, that's a -- another assumption 4 that you make as to the possibility of smoldering from a 5 cigarette, correct? 6 A. I didn't make any assumption on that. I -- I 7 am just listing that the curve that I provided based on 8 the test that we did could be extended if it was a 9 smoldering fire, and I provided the research that 10 supported that. 11 Q. So if you weren't really analyzing that part 12 of it, why even include that? 13 A. I wanted to make sure that somebody would know 14 that if this was a smoldering fire, this heat release 15 rate curve, you know, the -- the fuel isn't just going 16 to be consumed in a smoldering fire in ten minutes, 15 17 minutes. So if it's a smoldering fire, I just was 18 trying to clarify that this could have lasted longer, 19 because our test was just a flame. That's how we 20 started the fire. 21 Q. Okay. Was that for purposes of other experts 22 like Filas to analyze? 23 A. No. You know, I know the type of fuels that 24 were in -- in the shed generally from the testimony. We 25 know that it's a smoker shed, right? That's what they</p>	<p style="text-align: right;">Page 125</p> <p>1 that's not -- I did not do that analysis. So when I 2 was reading depositions, I wasn't focused on -- on 3 those issues at all. The only thing that I did see 4 for certain is that she -- she indicated she smoked 5 in that shed, and it was termed a smoker shed. So I 6 just drew the smoldering research in there to 7 account for a timeline aspect. 8 BY MR. AYALA: 9 Q. As a -- as a fire investigator for all of the 10 years that you've been doing this, analyzing fires, 11 wouldn't that be something you'd notice as you're going 12 through materials? Like Mr. Pasborg would have, at 13 least you'd expect him to notice if there's a burning 14 shed. 15 As you're going through these materials, 16 wouldn't you have noticed if there was any evidence in 17 there to suggest that this was as a result of a 18 cigarette smoldering? 19 A. I -- you know, generally as a fire 20 investigator answering that question, not specific to 21 this analysis, and knowing this fire test, no. Because 22 this -- this shed is a plastic shed, and it melts down. 23 And we had to pry the drywall off of the concrete 24 because it's just adhered to it. So, you know, if there 25 were smoking materials in there, they might not have</p>